



# TORQ Analysis of Printing Machine Operators to Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

## INPUT SECTION:

Transfer	Title	O* NET	Filters		
From Title:	Printing Machine Operators	51-5023.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	51-4031.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## OUTPUT SECTION:

Grand TORQ:

85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	80	Level	90	Level	85

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Visualization	49	11	66	Active Listening	52	11	70	No Knowledge Upgrades Required!			
Control Precision	50	9	75	Quality Control Analysis	63	7	79				
Static Strength	40	13	50	Troubleshooting	58	3	72				
Manual Dexterity	46	9	68								
Multilimb Coordination	38	11	53								
Arm-Hand Steadiness	44	10	58								
Information Ordering	45	7	68								
Finger Dexterity	42	7	53								
Problem Sensitivity	34	4	52								
Written Comprehension	37	3	58								

LEVEL and IMPT (IMPORTANCE) refer to the Target Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic. GAP refers to level difference between Printing Machine Operators and Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic.

## ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50



Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	Importance
Control Precision	41	50	75
Information Ordering	38	45	68
Manual Dexterity	37	46	68
Visualization	38	49	66
Near Vision	45	44	63
Written Comprehension	34	37	58
Arm-Hand Steadiness	34	44	58
Finger Dexterity	35	42	53
Multilimb Coordination	27	38	53
Problem Sensitivity	30	34	52
Static Strength	27	40	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	Importance
Quality Control Analysis	56	63	79
Operation Monitoring	64	58	72
Troubleshooting	55	58	72
Operation and Control	66	59	71
Active Listening	41	52	70
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	Importance

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	3%	0%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	7%	0%	Master's Degree	0%	0%
2-4 years	24%	0%	Post-Bachelor Cert	0%	0%
			Bachelors	0%	0%
			AA or Equiv	0%	0%



1-2 years	13%	11%	Some College	5%	0%
6-12 months	3%	17%	Post-Secondary Certificate	8%	1%
3-6 months	6%	9%	High School Diploma or GED	85%	79%
1-3 months	0%	19%	No HSD or GED	1%	18%
0-1 month	0%	8%			
None	39%	33%			

## Printing Machine Operators

## Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

## Most Common Educational/Training Requirement:

Moderate-term on-the-job training

Moderate-term on-the-job training

## Job Zone Comparison

## 2 - Job Zone Two: Some Preparation Needed

Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

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## Tasks

## Printing Machine Operators

## Core Tasks

## Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

## Specific Tasks

## Occupation Specific Tasks:

## Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

## Core Tasks

## Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

## Specific Tasks



- Apply glue or tape to holes in screens in order to repair leaks.
- Attach cloth to take-up rollers, placing it in feeding position and threading it through equipment as necessary.
- Blend and test paint, inks, stains, and solvents according to types of material being printed and work order specifications.
- Clean and lubricate printing machines and components, using oil, solvents, brushes, rags, and hoses.
- Coordinate printing activities with activities of workers who set up, clean, and feed machines.
- Correct misprinted materials, using materials such as ink eradicators or solvents.
- Direct and monitor activities of workers feeding, inspecting, and tending printing machines and materials.
- Examine job orders to determine details such as quantities to be printed, production times, stock specifications, colors, and color sequences.
- Input instructions in order to program automated machinery, using a computer keyboard.
- Inspect and examine printed products for print clarity, color accuracy, conformance to specifications, and external defects.
- Load, position, and adjust unprinted materials on holding fixtures or in equipment loading and feeding mechanisms.
- Maintain records of goods produced, supplies used, production costs, and machine maintenance and repair activities.
- Measure screens, and use measurements to center and align screens in proper positions and sequences on machines, using gauges and hand tools.
- Monitor and control operation of auxiliary equipment used to assemble and finish products.
- Monitor feeding, printing, and racking processes of presses in order to maintain specified operating levels and to detect malfunctions; make any necessary adjustments.
- Monitor stocks of materials such as paper, ink, and metal in order to maintain supplies during equipment operation.
- Operate equipment at slow speed to ensure proper ink coverage, alignment, and registration.
- Pack and label cartons, boxes, or bins of finished products.
- Place printed items in ovens to dry or set ink.
- Place spools of thread or wire on holders, and thread through machines.
- Position knives at specified distances from

#### Occupation Specific Tasks:

- Adjust ram strokes of presses to specified lengths, using hand tools.
- Clean and lubricate machines.
- Examine completed workpieces for defects such as chipped edges and marred surfaces, and sort defective pieces according to types of flaws.
- Grind out burrs and sharp edges, using portable grinders, speed lathes, and polishing jacks.
- Hand-form, cut, or finish workpieces, using tools such as table saws, hand sledges, and anvils.
- Hone cutters with oilstones to remove nicks.
- Install, align, and lock specified punches, dies, cutting blades or other fixtures in rams or beds of machines, using gauges, templates, feelers, shims, and hand tools.
- Load workpieces, plastic material, or chemical solutions into machines.
- Lubricate workpieces with oil.
- Mark identifying data on workpieces.
- Measure completed workpieces to verify conformance to specifications, using micrometers, gauges, calipers, templates, or rulers.
- Place workpieces on cutting tables, manually or using hoists, cranes, or sledges.
- Plan sequences of operations, applying knowledge of physical properties of workpiece materials.
- Position guides, stops, holding blocks, or other fixtures to secure and direct workpieces, using hand tools and measuring devices.
- Position, align, and secure workpieces against fixtures or stops on machine beds or on dies.
- Preheat workpieces, using heating furnaces or hand torches.
- Read work orders and production schedules to determine specifications, such as materials to be used, locations of cutting lines, and dimensions and tolerances.
- Remove housings, feed tubes, tool holders, and other accessories in order to replace worn or broken parts such as springs and bushings.
- Replace defective blades or wheels, using hand tools.
- Scribe reference lines on workpieces as guides for cutting operations, according to blueprints, templates, sample parts, or specifications.
- Select, clean, and install spacers, rubber sleeves, and cutters on arbors.
- Set blade tensions, heights, and angles to perform prescribed cuts, using wrenches.



edges of plastic material in order to trim excess material from edges.

- Pour ink into pans, and smooth paint onto stencils, using flat-bladed knives.
- Pour or spread paint, ink, color compounds, and other materials into reservoirs, troughs, hoppers, or color holders of printing units, making measurements and adjustments to control color and viscosity.
- Prepare and treat lithographic plates with various chemicals to clean and preserve plates and fix images.
- Provide assistance in the design and layout of forms and materials to be printed.
- Push buttons, turn handles or move controls and levers to start and control printing machines.
- Remove printed materials from presses, using handtrucks, electric lifts, or hoists, and transport them to drying, storage or finishing areas.
- Repair, maintain, or adjust equipment.
- Reposition printing plates, adjust pressure rolls, or otherwise adjust machines to improve print quality, using knobs, handwheels, or hand tools.
- Requisition supplies, materials, and equipment, and receive stock when it arrives.
- Select and install printing plates, rollers, feed guides, gauges, screens, stencils, type, dies, and cylinders in machines according to specifications, using hand tools.
- Set and adjust speed, temperature, ink flow, and positions and pressure tolerances of equipment.
- Squeeze or spread ink on plates, pads, or rollers, using putty knives, brushes, or sponges.
- Thin printing compounds, using specified thinners.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust production equipment/machinery setup
- assure quality control in printing processes
- attach or mark identification onto products or containers
- clean equipment or machinery
- collect payment
- demonstrate or explain assembly or use of equipment
- determine film exposure settings
- determine specifications
- develop film or other photographic medium
- direct and coordinate activities of workers

- Set stops on machine beds, change dies, and adjust components, such as rams or power presses, when making multiple or successive passes.
- Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.
- Sharpen dulled blades, using bench grinders, abrasive wheels, or lathes.
- Start machines, monitor their operations, and record operational data.
- Test and adjust machine speeds and actions, according to product specifications, and using gauges and hand tools.
- Thread ends of metal coils from reels through slitters, and secure ends on recoilers.
- Turn controls to set cutting speeds, feed rates, and table angles for specified operations.
- Turn valves to start flow of coolant against cutting areas and to start airflow that blows cuttings away from kerfs.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust production equipment/machinery setup
- attach or mark identification onto products or containers
- clean equipment or machinery
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- maintain or repair industrial or related equipment/machinery
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate hoist, winch, or hydraulic boom
- operate metal or plastic fabricating equipment/machinery
- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read blueprints
- read production layouts
- read specifications
- read technical drawings
- read work order, instructions, formulas, or



or staff

- distinguish colors
- examine products or work to verify conformance to specifications
- fabricate printing plates
- identify color or balance
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- mix paint, ingredients, or chemicals, according to specifications
- mix printing solutions
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate bindery equipment
- operate cameras
- operate fabric printing equipment
- operate graphic reproduction equipment
- operate hoist, winch, or hydraulic boom
- operate printing equipment/machinery
- operate scanner
- perform safety inspections in manufacturing or industrial setting
- process photographic prints
- read production layouts
- read specifications
- read work order, instructions, formulas, or processing charts
- receive customer orders
- restore photographs
- retouch negatives or prints
- set page layout or composition
- set up production equipment or machinery
- strip negatives
- understand technical operating, service or repair manuals
- use color analyzer
- use densitometer
- use desktop publishing software
- use hand or power tools
- use precision measuring tools or equipment

#### Technology - Examples

Calendar and scheduling software

processing charts

- recognize characteristics of metals
- set up computer numerical control machines
- set up production equipment or machinery
- understand machine setup instructions
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

#### Technology - Examples



- Job scheduling software

Data base user interface and query software

- Printing management system software

Electronic mail software

- Microsoft Outlook

Inventory management software

- Inventory tracking software

Spreadsheet software

- Microsoft Excel

Word processing software

- Microsoft Word

#### Tools - Examples

- Adjustable wrenches

- Materials conveyors

- Conductivity indicators

- Densitometers

- Desktop computers

- Flexo presses

- Grease guns

- Claw hammers

- Hand trucks

- Packing gauges

- Hoists

- Pallet jacks

- Letter presses

- Electric lifts

- Vise grip pliers

- Hand-held magnifiers

- Micrometers

- Offset printing equipment

- Paper drills

- Paper joggers

- Perforators

- Personal computers



- pH indicators
- Digital copiers
- Gravure presses
- Platemaking equipment
- Folding equipment
- Collating equipment
- Cutting equipment
- Multicolor presses
- Putty knives
- Ratchets
- Phillips head screwdrivers
- Screen printing presses
- Stackers
- Stapling machines
- Measuring tapes
- Strappers

### Labor Market Comparison

Description	Printing Machine Operators	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	Difference
Median Wage	\$ 29,710	\$ 27,500	\$( 2,210)
10th Percentile Wage	\$ 21,270	\$ 17,200	\$( 4,070)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 36,080	\$ 31,510	\$( 4,570)
90th Percentile Wage	\$ 44,010	\$ 37,720	\$( 6,290)
Mean Wage	\$ 30,870	\$ 27,250	\$( 3,620)
Total Employment - 2007	790	450	-340
Employment Base - 2006	820	461	-359
Projected Employment - 2016	798	395	-403
Projected Job Growth - 2006-2016	-2.7 %	-14.3 %	-11.6 %
Projected Annual Openings - 2006-2016	18	11	-7

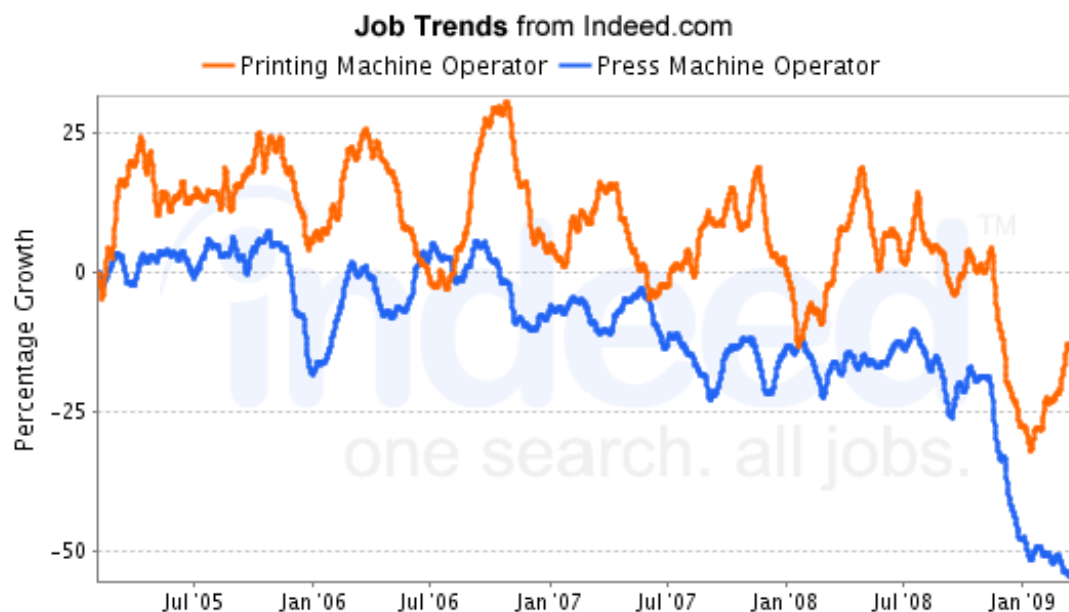




## National Job Posting Trends

Trend for Printing Machine Operators

Trend for  
Cutting,  
Punching,  
and Press  
Machine  
Setters,  
Operators,  
and  
Tenders,  
Metal and  
Plastic



Data from [Indeed](http://Indeed.com)

## Recommended Programs

Machinist/Machine Technologist

Machine Tool Technology/Machinist. A program that prepares individuals to apply technical knowledge and skills to plan, manufacture, assemble, test, and repair parts, mechanisms, machines, and structures in which materials are cast, formed, shaped, molded, heat treated, cut, twisted, pressed, fused, stamped or worked.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>
Southern Maine Community College	2 Fort Road	South Portland	<a href="http://www.smccME.edu">www.smccME.edu</a>

Machine Shop Assistant



Machine Shop Technology/Assistant. A program that prepares individuals to apply technical knowledge and skills to fabricate and modify metal parts in support of other manufacturing, repair or design activities, or as an independent business.

No schools available for the program

#### Sheet Metal Worker

Sheet Metal Technology/Sheetworking. A program that prepares individuals to apply technical knowledge and skills to form, shape, bend and fold extruded metals, including the creation of new products, using hand tools and machines such as cornice brakes, forming rolls, and squaring shears.

Institution	Address	City	URL
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>

### Maine Statewide Promotion Opportunities for Printing Machine Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
51-5023.00	Printing Machine Operators	100	2	790	\$29,710.00	\$0.00	-3%	18
51-4193.00	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	86	2	120	\$32,160.00	\$2,450.00	16%	5
51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	84	2	120	\$36,960.00	\$7,250.00	2%	3
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	\$38,230.00	\$8,520.00	-26%	23
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	3	110	\$34,350.00	\$4,640.00	-9%	2
51-9071.06	Gem and Diamond Workers	80	2	220	\$32,520.00	\$2,810.00	7%	7
51-4121.07	Solderers and Brazers	79	2	1,610	\$38,030.00	\$8,320.00	7%	49
51-5021.00	Job Printers	79	3	140	\$31,890.00	\$2,180.00	-10%	2
51-9032.00	Cutting and Slicing Machine Setters, Operators, and Tenders	78	2	710	\$31,350.00	\$1,640.00	-23%	12
51-9023.00	Mixing and Blending Machine Setters, Operators, and Tenders	77	1	420	\$36,040.00	\$6,330.00	-9%	7



51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	77	2	850	\$38,860.00	\$9,150.00	-26%	19
51-9122.00	Painters, Transportation Equipment	77	2	320	\$32,230.00	\$2,520.00	2%	8
51-2021.00	Coil Winders, Tapers, and Finishers	77	2	90	\$31,910.00	\$2,200.00	-53%	1
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	76	2	300	\$32,980.00	\$3,270.00	-18%	9
51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	76	2	100	\$33,030.00	\$3,320.00	-22%	2

### Top Industries for Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Employment services	561300	10.95%	29,744	36,424	22.46%
Motor vehicle parts manufacturing	336300	10.08%	27,394	19,628	-28.35%
Architectural and structural metals manufacturing	332300	8.80%	23,910	22,983	-3.88%
Forging and stamping	332100	6.81%	18,517	13,040	-29.57%
Plastics product manufacturing	326100	5.31%	14,440	13,775	-4.60%
Other fabricated metal product manufacturing	332900	3.61%	9,822	7,833	-20.26%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	2.93%	7,972	6,600	-17.21%
Metalworking machinery manufacturing	333500	2.35%	6,374	4,697	-26.32%
Other general purpose machinery manufacturing	333900	1.82%	4,945	4,018	-18.76%
Boiler, tank, and shipping container manufacturing	332400	1.82%	4,936	4,003	-18.90%
Machine shops	332710	1.79%	4,876	3,630	-25.55%
Steel product manufacturing from purchased steel	331200	1.79%	4,869	3,878	-20.35%
Spring and wire product manufacturing	332600	1.76%	4,776	3,182	-33.37%
Agriculture, construction, and mining machinery manufacturing	333100	1.69%	4,593	3,859	-15.97%



Metal and mineral (except petroleum) merchant wholesalers	423500	1.59%	4,325	4,275	-1.16%
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### Top Industries for Printing Machine Operators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Printing and related support activities	323100	50.92%	100,610	90,254	-10.29%
Newspaper publishers	511110	7.59%	14,990	12,841	-14.33%
Converted paper product manufacturing	322200	6.58%	12,998	10,908	-16.08%
Advertising and related services	541800	3.23%	6,387	7,207	12.83%
Plastics product manufacturing	326100	2.76%	5,460	5,788	6.00%
Specialized design services	541400	1.92%	3,793	5,076	33.81%
Textile and fabric finishing and fabric coating mills	313300	1.66%	3,277	2,021	-38.33%
Self-employed workers, primary job	000601	1.45%	2,864	3,052	6.54%
Employment services	561300	1.41%	2,783	3,522	26.56%
Colleges, universities, and professional schools, public and private	611300	0.89%	1,761	1,970	11.87%
Animal slaughtering and processing	311600	0.86%	1,706	1,947	14.13%
Paper and paper product merchant wholesalers	424100	0.80%	1,585	1,693	6.83%
Self-employed workers, secondary job	000602	0.74%	1,465	1,459	-0.45%
Cut and sew apparel manufacturing	315200	0.64%	1,266	534	-57.77%
Clothing stores	448100	0.61%	1,203	1,263	4.97%